

SEQUENCE LISTING

<110> Brenda F. Baker
Lex M. Cowser

<120> ANTISENSE MODULATION OF MATRIX METALLOPROTEINASE 1 EXPRESSION

<130> RTS-0139

<160> 89

<210> 1

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 1

tccgtcatcg ctcctcaggg

20

<210> 2

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 2

atgcattctg cccccaagga

20

<210> 3

<211> 1970

10035485 101701

SUB
A

<212> DNA

<213> Homo sapiens

<220>

<220>

<221> CDS

<222> (69)...(1478)

<400> 3

atattggagt agcaagaggc tgggaagcca tcacttacct tgcactgaga aagaagacaa 60

aggccagt atg cac agc ttt cct cca ctg ctg ctg ctg ctg ttc tgg ggt 110
Met His Ser Phe Pro Pro Leu Leu Leu Leu Leu Phe Trp Gly
1 5 10

gtg gtg tct cac agc ttc cca gcg act cta gaa aca caa gag caa gat 158
Val Val Ser His Ser Phe Pro Ala Thr Leu Glu Thr Gln Glu Gln Asp
15 20 25 30

gtg gac tta gtc cag aaa tac ctg gaa aaa tac tac aac ctg aag aat 206
Val Asp Leu Val Gln Lys Tyr Leu Glu Lys Tyr Tyr Asn Leu Lys Asn
35 40 45

gat ggg agg caa gtt gaa aag cgg aga aat agt ggc cca gtg gtt gaa 254
Asp Gly Arg Gln Val Glu Lys Arg Arg Asn Ser Gly Pro Val Val Glu
50 55 60

aaa ttg aag caa atg cag gaa ttc ttt ggg ctg aaa gtg act ggg aaa 302
Lys Leu Lys Gln Met Gln Glu Phe Phe Gly Leu Lys Val Thr Gly Lys
65 70 75

cca gat gct gaa acc ctg aag gtg atg aag cag ccc aga tgt gga gtg 350
Pro Asp Ala Glu Thr Leu Lys Val Met Lys Gln Pro Arg Cys Gly Val
80 85 90

cct gat gtg gct cag ttt gtc ctc act gag ggg aac cct cgc tgg gag 398
Pro Asp Val Ala Gln Phe Val Leu Thr Glu Gly Asn Pro Arg Trp Glu
95 100 105 110

caa aca cat ctg acc tac agg att gaa aat tac acg cca gat ttg cca 446
Gln Thr His Leu Thr Tyr Arg Ile Glu Asn Tyr Thr Pro Asp Leu Pro
115 120 125

10035485.101701

aga gca gat gtg gac cat gcc att gag aaa gcc ttc caa ctc tgg agt 494
 Arg Ala Asp Val Asp His Ala Ile Glu Lys Ala Phe Gln Leu Trp Ser
 130 135 140

aat gtc aca cct ctg aca ttc acc aag gtc tct gag ggt caa gca gac 542
 Asn Val Thr Pro Leu Thr Phe Thr Lys Val Ser Glu Gly Gln Ala Asp
 145 150 155

atc atg ata tct ttt gtc agg gga gat cat cgg gac aac tct cct ttt 590
 Ile Met Ile Ser Phe Val Arg Gly Asp His Arg Asp Asn Ser Pro Phe
 160 165 170

gat gga cct gga gga aat ctt gct cat gct ttt caa cca ggc cca ggt 638
 Asp Gly Pro Gly Gly Asn Leu Ala His Ala Phe Gln Pro Gly Pro Gly
 175 180 185 190

att gga ggg gat gct cat ttt gat gaa gat gaa agg tgg acc aac aat 686
 Ile Gly Gly Asp Ala His Phe Asp Glu Asp Glu Arg Trp Thr Asn Asn
 195 200 205

ttc aga gag tac aac tta cat cgt gtt gcg gct cat gaa ctc ggc cat 734
 Phe Arg Glu Tyr Asn Leu His Arg Val Ala Ala His Glu Leu Gly His
 210 215 220

tct ctt gga ctc tcc cat tct act gat atc ggg gct ttg atg tac cct 782
 Ser Leu Gly Leu Ser His Ser Thr Asp Ile Gly Ala Leu Met Tyr Pro
 225 230 235

agc tac acc ttc agt ggt gat gtt cag cta gct cag gat gac att gat 830
 Ser Tyr Thr Phe Ser Gly Asp Val Gln Leu Ala Gln Asp Asp Ile Asp
 240 245 250

ggc atc caa gcc ata tat gga cgt tcc caa aat cct gtc cag ccc atc 878
 Gly Ile Gln Ala Ile Tyr Gly Arg Ser Gln Asn Pro Val Gln Pro Ile
 255 260 265 270

ggc cca caa acc cca aaa gca tgt gac agt aag cta acc ttt gat gct 926
 Gly Pro Gln Thr Pro Lys Ala Cys Asp Ser Lys Leu Thr Phe Asp Ala
 275 280 285

ata act acg att cgg gga gaa gtg atg ttc ttt aaa gac aga ttc tac 974
 Ile Thr Thr Ile Arg Gly Glu Val Met Phe Phe Lys Asp Arg Phe Tyr
 290 295 300

1003548-101701
 T02T0T "S84500T

atg cgc aca aat ccc ttc tac ccg gaa gtt gag ctc aat ttc att tct 1022
 Met Arg Thr Asn Pro Phe Tyr Pro Glu Val Glu Leu Asn Phe Ile Ser
 305 310 315

gtt ttc tgg cca caa ctg cca aat ggg ctt gaa gct gct tac gaa ttt 1070
 Val Phe Trp Pro Gln Leu Pro Asn Gly Leu Glu Ala Ala Tyr Glu Phe
 320 325 330

gcc gac aga gat gaa gtc cgg ttt ttc aaa ggg aat aag tac tgg gct 1118
 Ala Asp Arg Asp Glu Val Arg Phe Phe Lys Gly Asn Lys Tyr Trp Ala
 335 340 345 350

gtt cag gga cag aat gtg cta cac gga tac ccc aag gac atc tac agc 1166
 Val Gln Gly Gln Asn Val Leu His Gly Tyr Pro Lys Asp Ile Tyr Ser
 355 360 365

tcc ttt ggc ttc cct aga act gtg aag cat atc gat gct gct ctt tct 1214
 Ser Phe Gly Phe Pro Arg Thr Val Lys His Ile Asp Ala Ala Leu Ser
 370 375 380

gag gaa aac act gga aaa acc tac ttc ttt gtt gct aac aaa tac tgg 1262
 Glu Glu Asn Thr Gly Lys Thr Tyr Phe Phe Val Ala Asn Lys Tyr Trp
 385 390 395

agg tat gat gaa tat aaa cga tct atg gat cca ggt tat ccc aaa atg 1310
 Arg Tyr Asp Glu Tyr Lys Arg Ser Met Asp Pro Gly Tyr Pro Lys Met
 400 405 410

ata gca cat gac ttt cct gga att ggc cac aaa gtt gat gca gtt ttc 1358
 Ile Ala His Asp Phe Pro Gly Ile Gly His Lys Val Asp Ala Val Phe
 415 420 425 430

atg aaa gat gga ttt ttc tat ttc ttt cat gga aca aga caa tac aaa 1406
 Met Lys Asp Gly Phe Phe Tyr Phe Phe His Gly Thr Arg Gln Tyr Lys
 435 440 445

ttt gat cct aaa acg aag aga att ttg act ctc cag aaa gct aat agc 1454
 Phe Asp Pro Lys Thr Lys Arg Ile Leu Thr Leu Gln Lys Ala Asn Ser
 450 455 460

tgg ttc aac tgc agg aaa aat tga acattactaa tttgaatgga aaacacatgg 1508
 Trp Phe Asn Cys Arg Lys Asn
 465

10035485 101701
 T02T0T " S04S00T

tgtgagtcca aagaaggtgt tttcctgaag aactgtctat tttctcagtc atttttaacc 1568
tctagagtca ctgatacaca gaataataatc ttattttatac ctcagtttgc atattttttt 1628
actattttaga atgtagccct ttttgtactg atataattta gttccacaaa tgggtgggtac 1688
aaaaagtcaa gtttgtggct tatggattca tataggccag agttgcaaag atctttttcca 1748
gagtatgcaa ctctgacgtt gatcccagag agcagcttca gtgacaaaca tatcctttca 1808
agacagaaaag agacaggaga catgagtctt tgccggagga aaagcagctc aagaacacat 1868
gtgcagtcac tgggtgtcacc ctggataggg aagggataac tcttctaaca caaaataagt 1928
gttttatgtt tggaataaag tcaaccttgt ttctactgtt tt 1970

<210> 4
<211> 18
<212> DNA
<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 4
cctcgctggg agcaaaca 18

<210> 5
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 5
tctcaatggc atggtccaca t 21

<210> 6

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Probe

<400> 6

tctgacctac aggattgaaa attacacgcc a

31

<210> 7

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 7

gaaggtgaag gtcggagtc

19

<210> 8

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 8

gaagatggtg atgggatttc

20

<210> 9

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Probe

<400> 9

caagcttccc gttctcagcc

20

<210> 10

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 10

gcctcttgct actccaatat

20

<210> 11

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 11

aaggtaagtg atggcttccc

20

<210> 12

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 12

ctggcctttg tcttctttct

20

10035435 101701

<210> 13
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 13
gcagtggagg aaagctgtgc

20

<210> 14
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 14
acaccccaga acagcagcag

20

<210> 15
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 15
cgctgggaag ctgtgagaca

20

<210> 16
<211> 20
<212> DNA

1003495101
1003495101

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 16

ttgctcttgt gtttctagag

20

<210> 17

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 17

ttctggacta agtccacatc

20

<210> 18

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 18

cccatcattc ttcaggttgt

20

<210> 19

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

100348-10101

<400> 19

tctccgcttt tcaacttgcc

20

<210> 20

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 20

ttcaaccact gggccactat

20

<210> 21

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 21

tttcagccca aagaattcct

20

<210> 22

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 22

cagcatctgg tttcccagtc

20

10035485 "101701
FOR SEQUENCE

<210> 23

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 23

tgcttcatca ccttcagggt

20

<210> 24

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 24

atcaggcact ccacatctgg

20

<210> 25

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 25

cagtgaggac aaactgagcc

20

<210> 26

<211> 20

<212> DNA

<213> Artificial Sequence

10035485 10101

<220>

<223> Antisense Oligonucleotide

<400> 26

tgctcccagc gagggttccc

20

<210> 27

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 27

aatcctgtag gtcagatgtg

20

<210> 28

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 28

gcaaatctgg cgtgtaattt

20

<210> 29

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 29

100548-10101

20

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

20

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

20

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

20

<211> 20

3036-3037

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 33

tgtctgcttg accctcagag

20

<210> 34

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 34

ccctgacaaa agatatcatg

20

<210> 35

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 35

gagagttgtc ccgatgatct

20

<210> 36

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

10035485 101701

<223> Antisense Oligonucleotide

<400> 36

ttcctccagg tccatcaaaa

20

<210> 37

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 37

ttgaaaagca tgagcaagat

20

<210> 38

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 38

cccctccaat acctgggcct

20

<210> 39

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 39

catcttcac aaaatgagca

20

10035435 10101

<210> 40
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 40
ctgaaattgt tgggtccacct 20

<210> 41
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 41
aacacgatgt aagttgtact 20

<210> 42
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 42
atggccgagt tcatgagccg 20

<210> 43
<211> 20
<212> DNA
<213> Artificial Sequence

10035435 10101

<220>

<223> Antisense Oligonucleotide

<400> 43

tagaatggga gagtccaaga

20

<210> 44

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 44

acatcaaagc cccgatatca

20

<210> 45

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 45

cactgaaggt gtagctaggg

20

<210> 46

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

10035485-10101
T02T0T "584500T

<400> 46

cctgagctag ctgaacatca

20

<210> 47

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 47

gcttggatgc catcaatgtc

20

<210> 48

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 48

tttgggaacg tccatatatg

20

<210> 49

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 49

ggccgatggg ctggacagga

20

<210> 50

100545-10404

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 50

caaagggttag cttactgtca

20

<210> 51

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 51

cccgaatcgt agttatagca

20

<210> 52

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 52

ctttaaagaa catcacttct

20

<210> 53

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

10035485-101701

<223> Antisense Oligonucleotide

<400> 53

ttgtgcgcat gtagaatctg

20

<210> 54

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 54

caacttcggt gtagaaggga

20

<210> 55

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 55

aaacagaaat gaaattgagc

20

<210> 56

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 56

catttggcag ttgtggccag

20

10035435-101701
T020T" S84E00T

<210> 57
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 57
aattcgtaag cagcttcaag

20

<210> 58
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 58
cggacttcat ctctgtcggc

20

<210> 59
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 59
tccctgaaca gcccgagtact

20

<210> 60
<211> 20
<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 60

gtatccgtgt agcacattct

20

<210> 61

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 61

agttctaggg aagccaaagg

20

<210> 62

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 62

agcagcatcg atatgcttca

20

<210> 63

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

10035435 104704

<400> 63

ttccagtgtt ttcctcagaa

20

<210> 64

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 64

atacctccag tatttgtag

20

<210> 65

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 65

catagatcgt ttatattcat

20

<210> 66

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 66

atatttgggat aacctggatc

20

10035435 101701

<210> 67
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 67
ccaggaaagt catgtgctat 20

<210> 68
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 68
gcatcaactt tgtggccaat 20

<210> 69
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 69
aaatccatct ttcataaaa 20

<210> 70
<211> 20
<212> DNA
<213> Artificial Sequence

1035485-10101

<220>

<223> Antisense Oligonucleotide

<400> 70

caaatttgta ttgtcttggt

20

<210> 71

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 71

aaaattctct tcgttttagg

20

<210> 72

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 72

ctattagctt tctggagagt

20

<210> 73

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 73

10035485 "10701"

aaattagtaa tgttcaattt

20

<210> 74

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 74

ttggactcac accatgtgtt

20

<210> 75

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 75

ttcttcagga aaacaccttc

20

<210> 76

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 76

atgactgaga aaatagacag

20

<210> 77

<211> 20

10035485 101701
FOR "SAFE" FILE

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 77

ttatattctg tgtatcagtg

20

<210> 78

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 78

caaactgagg tataaataag

20

<210> 79

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 79

aactaaatta tatcagtaca

20

<210> 80

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

10035485-101701

<223> Antisense Oligonucleotide

<400> 80

ttttgtaccc accatttgtg

20

<210> 81

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 81

ctctggccta tatgaatcca

20

<210> 82

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 82

ctctggaaaa gatctttgca

20

<210> 83

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 83

atcaacgtca gagttgcata

20

10035435 101701

<210> 84
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 84
tcactgaagc tgctctctgg

20

<210> 85
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 85
gtcttgaaag gatatgtttg

20

<210> 86
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 86
catgtctcct gtctctttct

20

<210> 87
<211> 20
<212> DNA
<213> Artificial Sequence

10035485 101701

<220>

<223> Antisense Oligonucleotide

<400> 87

tgcttttcct ccggcaaaga

20

<210> 88

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 88

gactgcacat gtgttcttga

20

<210> 89

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 89

ttttgtgtta gaagagttat

20

T02T0T"5B4S00T